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FOLD SYSTEMS IN THE „MÓRÁGY FORMATION", MECSEK MOUNTAINS, SOUTH-TRANSDANUBIAN REGION, HUNGARY

ERNŐ MAUL

H-7140 Bátaszék, Kossuth L. u. 18., Hungary

ABSTRACT

In the quarries of Mórágy and Bátaapáti four fold systems have been determined. It was also possible to determine the possible orogenic phases.

Editorial note (Tibor Szederkényi):

Concerning investigations carried out for the radioactive waste disposal in the Eastern Mecsek Mountains, new tectonic evaluations were made mainly in the area of the Mórágy Hill. These interpretations became widely accepted by now. However, based on field observations by other researchers, ideas different from these were formulated. The author – who is the doyen of Hungarian geology – have dealt among others more than sixty years with this topic. He has numerous statements, which are in contrast with the new interpretations. There might be some doubts concerning his opinion on the tectonic character and development of the crystalline mass of Mórágy Hill, nevertheless, these conclusions deserve a debate. Our periodical is willing to provide a framework for these discussions.

Key words: Mórágy Formation, fold systems.

INTRODUCTION

In 1940 count Géza Teleki- in his paper- supposes, Mecsek Granite being folded by a system of NNW-SSE direction. In April 1943- on a geological excursion- Assistant Professor Sándor Vitális-in the quarries of Mórágy and Kismórágy- demonstrated granite rocks being multiple folded (Fig. 1-2).

DESCRIPTION OF FOLD SYSTEMS

According to author's research work during the last four years- there were four fold systems in the Mecsek Mountains and the Granite Region- as follows:

Axial plane 105-285°: Vergency toward 195° Austrian orogenic phrase.

Axial plane 15-195°: Vergency toward 105° Subhercynian orogenic phrase.

Axial plane 60- 240°: Vergency toward 150° .Early Laramian

Axial plane 150-330°: Symmetric folds- commonly no vergency. Late Laramian pfase. In the Mecsek Mountains No.1. and No.3. are common, (more than 99%) No.2. and No.4. are very rare

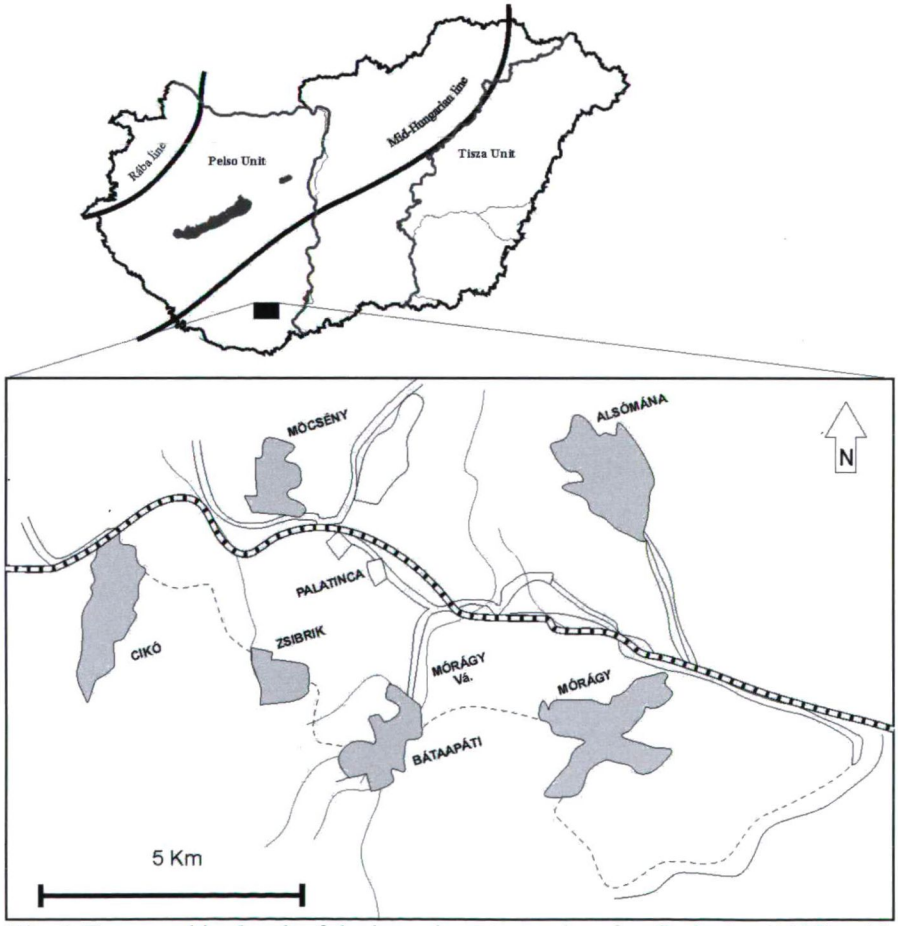

Fig. 1. Topographic sketch of the investigated quarries after Szabados (1995), with modifications.

In the two examined quarries, the ratio among the four systems is as follows:

1: 20 %
2: 6.3 %
3: 33.3 %
4: 40 %

The 40% of system number 4 proves evidence to count Géza Teleki's assumption of a NNW-SSE system.

It is notewonthy that the lineation of bostonite slabs and phenocrysts of sanidine is parallel to the main shear planes- on the limbs of folds and on the fracture cleaveges. Parallel lineation could be obtained near these shear surfaces within a distance of 10-15 cm. Beyond this distance crystals and rock fragments are placed irregularly.

Conclusion

Four fold systems have been determined in the two quarries. System number 4 which occurs rarely in the Mecsek Mountains- is found here to reach a value of 40%- which proves count Géza Teleki's statement about the folding of granitic rocks.

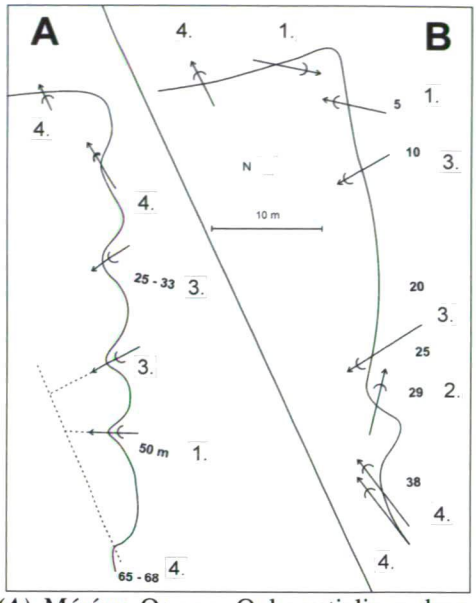

Fig. 2. ***(A)*** Mórágy Quarry. Only anticlines demonstrated. Arrows show direction and plunge of folds. ***(B)*** Bátaapáti Quarry. Only anticlines demonstrated. Arrows indicate direction and plunge of folds. Ground –level contours from E. Dudko.

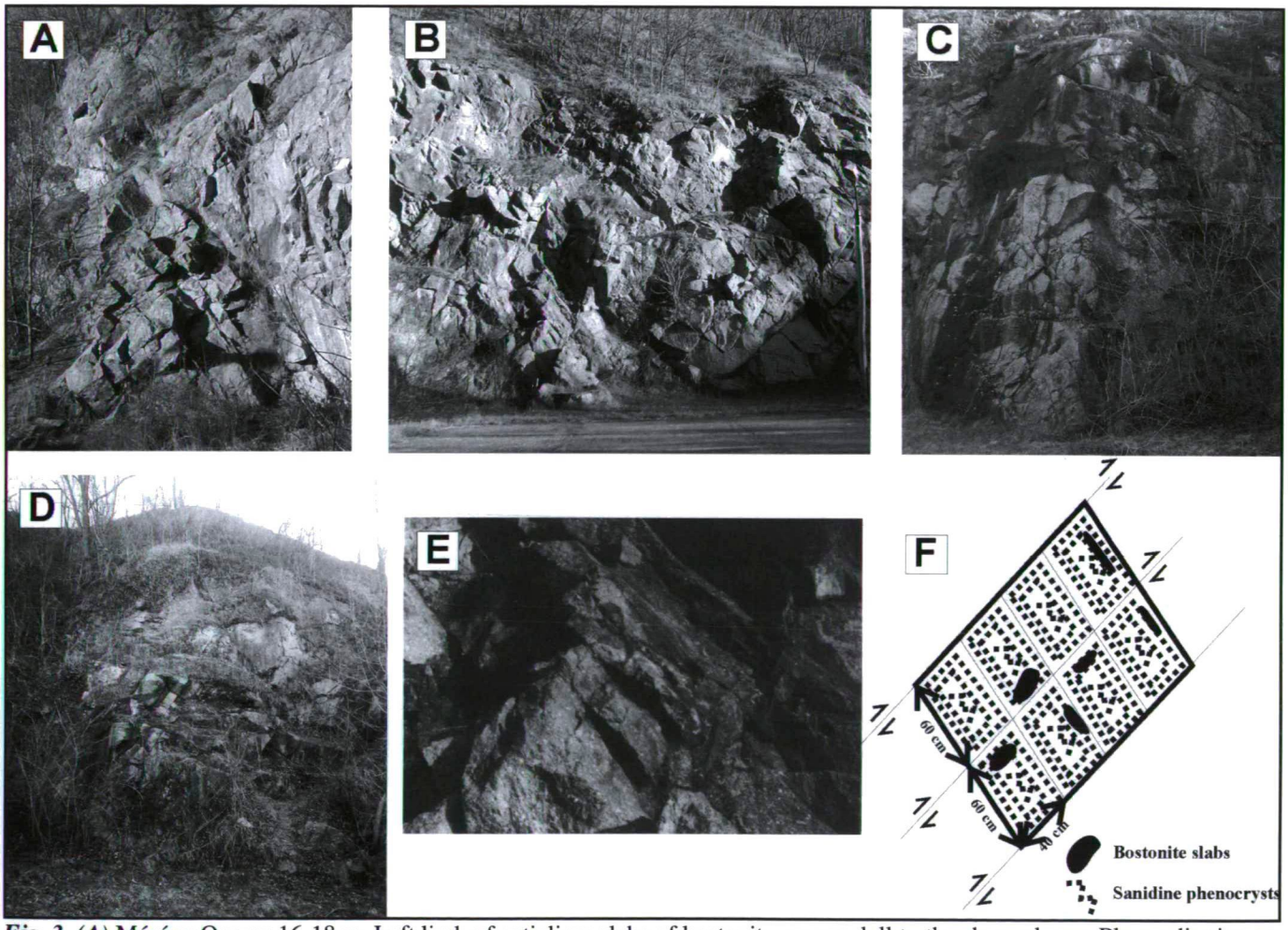

Fig. 3. ***(A)*** Mórágy Quarry 16-18 m. Left limb of anticline; slabs of bostonite are paralell to the shear planes. Planes dipping to the right are fracture cleavages. ***(B)*** Mórágy Quarry 25-33m. ***(C)*** Mórágy Quarry 50 m. ***(D)*** Mórágy Quarry 84-86m. ***(E)*** Mórágy Quarry 25-33m. Bostonite slabs and sanidine phenochrysts parallel to main shear planes. ***(F)*** Sketch illustrating lineation in folds. Left limb.

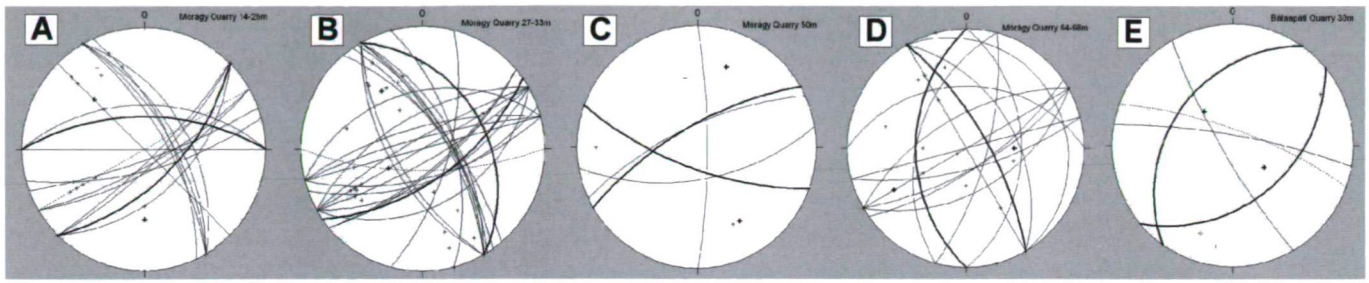

Fig. 5. Stereographics Projection of Mórágy and Bátaapáti Quarry folds. Lower hemisphere. ***(A)*** Mórágy Quarry 14-25m. Fold system No.3. ***(B)*** Mórágy Quarry. 27-33m. Fold system No.3. ***(C)*** Mórágy Quarry 50m. System No.1. Axis dislocated by system No.4. (at 64-68m). ***(D)*** Mórágy Quarry 64m. Fold system No.4. ***(E)*** Bátaapáti Quarry. Probably system No.2. dislocated by No.3. and No.4. systems.

REFERENCES

DUDKO, A. (2003): A Magyarhoni Földtani Társulat vándorgyűlése. Bátaapáti szept. 11-13. (in Hungarian)

FÜLÖP, J. (1994) Magyarország geológiája, Paleozoikum. Akadémiai Kiadó 306–317. (in Hungarian)

JANTSKY, B. (1950): A mecseki kristályos alaphegység földtani viszonyai. MÁFI Évi jelentés 1950. évről, 65–77. (in Hungarian)

JANTSKY, B. (1979): A mecseki gránitosodott kristályos alaphegység földtana. MÁFI Évkönyv 60, 30, 147, 150.

KOCSI, Z. (1995): A Mórágyi rögben található alsó kréta korú bosztonitok térbeli elhelyezkedése és petrográfiája. Manuscript. JATE Szeged. (in Hungarian)

MAROS, GY., PALOTÁS, K. (1999): Fracturing of the Mórágy Granite in Outtcrops and the Üveghuta Core Drill 1999/ II. Annual Report of the Geological Institute of Hungary.

SZABADOS, CS. (1995): Petrographical Study of Subvolcanic Rocks Surrounding of Mórágy and Ófalu. Acta Min Petr. 129–142.

SZEDERKÉNYI, T. (1996): Metamorphic Formations and Their Correlation int he Hungarian Part of Tisia Megaunit. (Tisia Composite Terrane.) Acta Min. Petr. 143–160.

TELEKI, G. (1941): Adatok a dunántúli paleozoikum tektonikájához. Földtani Közlöny **7/7-12**. 205-212; 295-296. (in Hungarian)

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